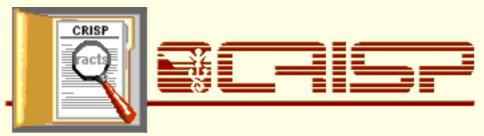crispprd 1.0

Abstract

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PI Title:

Project Title: PUPILLOMETRIC SLEEPINESS IN TREATED SLEEP DISORDERS

Abstract: Patients with obstructive sleep apnea and narcolepsy can experience a diminished quality of life, decreased productivity, and workplace and traffic accidents due to the pathologic excessive daytime sleepiness (EDS) associated with these disorders. Currently, the extent of EDS is determined by polysomnography and the Multiple-Sleep Latency Test (MSLT), two EEG-based physiologic sleepiness measures that are labor intensive, time-consuming, expensive and receive limited health insurance coverage. As people become sleepy, their pupils oscillate widely and decrease in size. In this study, the Pupil Unrest Index (PUI) will be calculated to estimate sleepiness using desk top pupillometry, an efficient, convenient, non-invasive and easily repeatable technique. The PUI quantitatively describes the extent of pupillary oscillation during 15 minutes of alertness testing. Quantitative data comparing the PUI to other physiologic sleepiness measures are not available. The subject cohorts for this repeated measures, known groups methodologic study will consist of normal controls, and obstructive sleep apnea and narcolepsy subjects before and after usual treatment. The specific aims are to (1) correlate the PUI with MSLT sleep latencies among the subject groups; 92) compare the PUI to the MSLT in detecting sleepiness among the three subject groups; and (3) compare the PUI and the MSLT to other objective and subjective sleepiness measures between subject groups, and before and after usual treatment among the OSA and narcolepsy subjects. MANOVA will be used to examine the linear relationship between the PUI and the MSLT among the subject groups, and the differences in measures of perceived sleepiness, sleep quantity, sleep quality and continuity, mood and functional status between the subject groups, and pre-post-treatment fore subjects with OSA and narcolepsy. The sensitivity and specificity of the PUI in detecting sleepiness will be estimated using the MSLT results as

the "gold standard" for classifying subjects. MLR will be used to estimate the relationship between the PUI or the MSLT, and other objective and subjective sleepiness measures. Results will provide evidence about the PUI as a reliable and valid objective outcome measure of waking tendency among controls, and pre-post-treatment for OSA and narcolepsy subjects.

Thesaurus Terms:
diagnosis design /evaluation, electroencephalography, narcolepsy, pupillography, sleep, sleep apnea
functional ability
clinical research, human subject

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